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ABSTRACT

This document, which is intended for use by community and junior colleges throughout Mississippi, contains curriculum frameworks for the course sequences in the veterinary technology program. Presented in the introductory section are a of the program and suggested course sequence. Section I lists baseline competencies, and section II consists of outlines for each course in the sequence. Veterinary technology courses include the following: veterinary math calculations, animal restraint and medication, animal anatomy and physiology, surgical and hospital techniques I, animal parasites and diseases, clinical pathology, surgical and hospital techniques II, and preceptorship. College of veterinary medicine courses are as follows: small animal health techniques, small animal medical techniques, equine medical techniques, food animal medical techniques, surgical techniques, anesthetic techniques, radiologic and imaging techniques, technical laboratory services, laboratory animal techniques, pharmacy techniques, necropsy techniques, animal health and technical procedures, laboratory animal care, and veterinary business procedures. Each course outline contains some/all of the following: course name and abbreviation; course classification; course description; prerequisites; and competencies and suggested objectives. Recommended tools and equipment are listed in section III. Appended are lists of related academic topics and workplace skills for the 21st century and student competency profiles for both courses. (MN)

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Mississippi Curriculum Framework for Veterinary Assisting Technology

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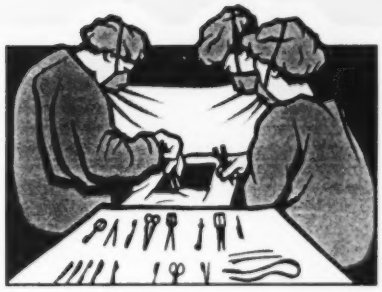

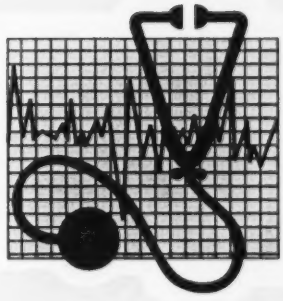

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MISSISSIPPI

CURRICULUM FRAMEWORK

FOR

VETERINARY TECHNOLOGY

(Program CIP: 51.0808 - Veterinarian Asst./Animal Health)

POSTSECONDARY PROGRAMS

1996

July 30, 1996

Direct inquiries to:

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FOREWORD

In order to survive in today's global economy, businesses and industries have had to adopt new practices and procedures. Total quality management, statistical process control, participatory management, and other concepts of high performance work organizations are practices by which successful companies survive. Employers now expect their employees to be able to read, write, and communicate effectively; solve problems and make decisions; and interact with the technologies that are prevalent in today's workplace. Vocational-technical education programs must also adopt these practices in order to provide graduates who can enter and advance in the changing work world.

The curriculum framework in this document reflects these changes in the workplace and a number of other factors that impact on local vocational-technical programs. Federal and state legislation calls for articulation between high school and community college programs, integration of academic and vocational skills, and the development of sequential courses of study that provide students with the optimum educational path for achieving successful employment. National skills standards, developed by industry groups and sponsored by the U. S. Departments of Education and Labor, provide vocational educators with the expectations of employers across the United States. All of these factors are reflected in the framework found in this document.

Each postsecondary program of instruction consists of a program description and a suggested sequence of courses which focus on the development of occupational competencies. Each vocational-technical course in this sequence has been written using a common format which includes the following components:

- Course Name - A common name that will be used by all community/junior colleges in reporting students.
- Course Abbreviation - A common abbreviation that will be used by all community/junior colleges in reporting students.
- Classification - Courses may be classified as:
  - Vocational-technical core - A required vocational-technical course for all students.
  - Vocational-technical elective - An elective vocational-technical course.
  - Related academic course - An academic course which provides academic skills and knowledge directly related to the program area.
  - Academic core - An academic course which is required as part of the requirements for an Associate degree.
- Description - A short narrative which includes the major purpose(s) of the course and the recommended number of hours of lecture and laboratory activities to be conducted each week during a regular semester.

- Prerequisites - A listing of any prerequisite courses that must be taken prior to or on enrollment in the course.
- Competencies and Suggested Objectives - A listing of the competencies (major concepts and performances) and of the suggested student objectives that will enable students to demonstrate mastery of these competencies.

The following guidelines were used in developing the program(s) in this document and should be considered in compiling and revising course syllabi and daily lesson plans at the local level:

- The content of the courses in this document reflects approximately 75 percent of the time allocated to each course. For example, in a four semester hour course consisting of 30 hours lecture and 120 hours of laboratory activities, approximately 22 hours of lecture and 90 hours of lab should be taken by the competencies and suggested objectives identified in the course framework. The remaining 25 percent of each course should be developed at the local district level and may reflect:
  - Additional competencies and objectives within the course related to topics not found in the State framework, including activities related to specific needs of industries in the community college district.
  - Activities which develop a higher level of mastery on the existing competencies and suggested objectives.
  - Activities and instruction related to new technologies and concepts that were not prevalent at the time the current framework was developed/revised.
  - Activities which implement components of the Mississippi Tech Prep initiative, including integration of academic and vocational-technical skills and coursework, school-to-career transition activities, and articulation of secondary and postsecondary vocational-technical programs.
  - Individualized learning activities, including worksite learning activities, to better prepare individuals in the courses for their chosen occupational area.

- Sequencing of the course within a program is left to the discretion of the local district. Naturally, foundation courses related to topics such as safety, tool and equipment usage, and other fundamental skills should be taught first. Other courses related to specific skill areas and related academics, however, may be sequenced to take advantage of seasonal and climatic conditions, resources located outside of the school, and other factors.

- Programs that offer an Associate of Applied Science degree must include a minimum 15 semester credit hour academic core. Specific courses to be taken within this core are to be determined by the local district. Minimum academic core courses are as follows:

- 3 semester credit hours Math/Science Elective
- 3 semester credit hours Written Communications Elective
- 3 semester credit hours Oral Communications Elective
- 3 semester credit hours Humanities/Fine Arts Elective
- 3 semester credit hours Social/Behavioral Science Elective

It is recommended that courses in the academic core be spaced out over the entire length of the program, so that students complete some academic and vocational-technical courses each semester. Each community/junior college has the discretion to select the actual courses that are required to meet this academic core requirement.

- In instances where secondary programs are directly related to community and junior college programs, competencies and suggested objectives from the high school programs are listed as Baseline Competencies. These competencies and objectives reflect skills and knowledge that are directly related to the community and junior college vocational-technical program. In adopting the curriculum framework, each community and junior college is asked to give assurances that:
  - students who can demonstrate mastery of the Baseline Competencies do not receive duplicate instruction, and
  - students who cannot demonstrate mastery of this content will be given the opportunity to do so.

- The roles of the Baseline Competencies are to:
  - Assist community/junior college personnel in developing articulation agreements with high schools, and
  - Ensure that all community and junior college courses provide a higher level of instruction than their secondary counterparts

- The Baseline Competencies may be taught as special "Introduction" courses for 3-6 semester hours of institutional credit which will not count toward Associate degree requirements. Community and junior colleges may choose to integrate the Baseline Competencies into ongoing courses in lieu of offering the "Introduction" courses or may offer the competencies through special projects or individualized instruction methods.

- Technical elective courses have been included to allow community colleges and students to customize programs to meet the needs of industries and employers in their area.

ACKNOWLEDGEMENTS

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July 30, 1996

VETERINARY TECHNOLOGY PROGRAMS
PROGRAM DESCRIPTION

The Veterinary Technology Program (accredited by the American Veterinarian Association) is a one-plus-one program offered by the Agriculture Department of Hinds Community College-Raymond campus and the College of Veterinary Medicine of Mississippi State University. The first year of the program is taught at Hinds Community College, and the second year is taught at Mississippi State University's College of Veterinary Medicine. Students successfully completing the program are prepared to enter various animal technology careers such as: Veterinary Technician (Animal Health) in small animal practice, small animal emergency practice, mixed animal practice, large animal practice, equine practice, and food animal practice.

Graduates would also be prepared for:

(1) taking the Assistant Laboratory Animal Technician certification examination to become an Assistant Laboratory Animal Technician.
(2) taking the Laboratory Animal Technician certification examination after attaining Assistant Laboratory Animal Technician certification.
(3) taking the Laboratory Animal Technologist certification examination after attaining Laboratory Animal Technician certification and completing four years of work experience in a laboratory animal facility.

After successfully completing the program, the student will be awarded an Associate of Applied Science Degree from Hinds Community College.

VETERINARY ASSISTING TECHNOLOGY PROGRAMS

SUGGESTED COURSE SEQUENCE*

FIRST YEAR

3 sch	Written Communications	3 sch	Oral Communications
	Elective		Elective
4 sch	Math/Science Elective†	3 sch	Humanities/Fine Arts
1 sch	Veterinary Math Calculations		Elective†
	(VAT 1111)	3 sch	Behavioral/Social Science
3 sch	Animal Restraint and		Elective†
	Medication (VAT 1213)	3 sch	Animal Parasites and
4 sch	Animal Anatomy and		Diseases (VAT 1513)
	Physiology (VAT 1314)	3 sch	Clinical Pathology
4 sch	Surgical and Hospital		(VAT 1613)
	Techniques I (VAT 1414)	4 sch	Surgical and Hospital
			Techniques II (VAT 1424)
19 sch		19 sch	

* Students who lack entry level skills in math, English, sciences, etc., will be provided related studies.

† Selected with approval of the Veterinary Technology Program Director.

SECOND YEAR – at Mississippi State University
College of Veterinary Medicine

2 sch	Animal Health Technical Procedures (CVM 2302)
4 sch	Laboratory Animal Care (CVM 2314)
4 sch	Small Animal Health Techniques (CVM 2104)
4 sch	Small Animal Medical Techniques (CVM 2114)
4 sch	Equine Medical Techniques (CVM 2124)
4 sch	Food Animal Medical Techniques (CVM 2134)
4 sch	Surgical Techniques (CVM 2144)
4 sch	Anesthetic Techniques (CVM 2154)
4 sch	Radiologic and Imaging Techniques (CVM 2164)
2 sch	Technical Laboratory Services (CVM 2172)
4 sch	Laboratory Animal Techniques (CVM 2184)
4 sch	Pharmacy Techniques (CVM 2204)
2 sch	Necropsy Techniques (CVM 2212)
2 sch	Veterinary Business Procedures (CVM 2322)
4 sch	Preceptorship (VAT 2414)

The second year clinical rotations and courses begin during August and are completed by July 1. There is no specific sequence for the rotations numbered VAT 2104-2314.

Preceptorship (VAT 2414) will be the last rotation, and follows successful completion of two years of course work. This rotation is administered by Hinds Community College.

Students must be 18 years of age before participating in the Radiologic and Imaging Techniques rotation.

SECTION I:

CURRICULUM GUIDE

FOR

VETERINARY TECHNOLOGY

VETERINARY TECHNOLOGY COURSES

Course Name: Veterinary Math Calculations

Course Abbreviation: VAT 1111

Classification: Vocational-Technical Core

Description: Veterinary Math Calculations provides a consistent approach to computations involved in drug and solution problems. (1 sch: 1 hr. lecture)

Prerequisites: None

Competencies and Suggested Objectives:

1. Demonstrate the numeration systems, fractions, decimals, percentages, and ratio-proportion problems.
   a. Utilize pretest to assess level of mathematics competencies.
   b. Identify the two numeration systems.
   c. Utilize the basic operations of fractions, decimals, and percentages.
   d. Solve problems using ratio and proportion.
   Related Academic Topics (See Appendix A): C1, C5, M1, M7
   Workplace Skills (See Appendix B): WP2, WP6
2. Differentiate the metric system and units of measures in the metric, apothecaries, and household systems.
   a. Perform calculations in the metric system of measure.
   b. Convert units of measure within the metric, apothecaries, and household systems of measure.
   c. Demonstrate proficiency with symbols in the metric, apothecaries, and household systems of measure.
   d. Utilize the proportion method when changing units of measure from one system to another.
   Related Academic Topics (See Appendix A): C1, C5, C6, M1, M4, M7
   Workplace Skills (See Appendix B): WP2, WP6
3. Calculate oral and parenteral dosages.
   a. Use the basic operations of ratio and proportions to solve problems for oral and parenteral medications.
   b. Demonstrate proficiency in correctly reading medication labels and orders.
   c. Determine dosage for oral and parenteral medications.
   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M4, M7
   Workplace Skills (See Appendix B): WP2, WP6
4. Calculate intravenous solution rates and the preparation of solutions.
   a. Demonstrate proficiency when calculating the intravenous rates with varying drop factor sets.
   b. Determine the correct length of time for intravenous infusions.
   c. Calculate solutions prepared from powders, crystals, or tablets.

d. Demonstrate proficiency when computing solutions prepared from liquid solutes.
e. Exhibit proficiency calculating solutions prepared from solutes with concentrations other than 100 percent concentrations.

Related Academic Topics (See Appendix A): C1, C5, M1, M3, M4, M7
Workplace Skills (See Appendix B): WP3, WP6

Course Name: Animal Restraint and Medication

Course Abbreviation: VAT 1213

Classification: Vocational-Technical Core

Description: Animal Restraint and Medication is the study and practice of restraining small animals, utilizing both chemical and physical means of safe and humane restraint. Included in the course is basic terminology, usage, administration, and general knowledge of common drugs and vaccines. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: None

Competencies and Suggested Objectives:

1. Explain the proper techniques in restraining domestic animals.
   a. Demonstrate proper restraining techniques for the horse.
   b. Demonstrate proper restraining techniques for the cow.
   c. Demonstrate proper restraining techniques for the dog.
   d. Demonstrate proper restraining techniques for the cat.
   e. Demonstrate proper restraining techniques for other domestic and exotic animals.

   Related Academic Topics (See Appendix A): C1, S1, S8
   Workplace Skills (See Appendix B): WP3, WP6
2. Demonstrate techniques of collecting medical history data, the performance of a physical examination, and completing a medical record.
   a. Take a medical history.
   b. Perform a physical examination.
   c. Record normal body temperature, pulse and respiration.
   d. Perform auscultation of lungs and heart.
   e. Palpate normal body structures.
   f. Maintain a correct medical record.

   Related Academic Topics (See Appendix A): C1, C5, C6, M1, S1, S8
   Workplace Skills (See Appendix B): WP2, WP3, WP6
3. Use a microscope to perform a fecal examination, and identify common parasite ova.
   a. Explain the parts of a microscope and its proper use.
   b. Perform a direct fecal examination.
   c. Perform a flotation fecal examination.
   d. Perform a gross fecal examination.

e. Identify small animal and large animal common intestinal parasite ova such as roundworms, hookworms, coccidia, tapeworms, HON's, and strongles.

Related Academic Topics (See Appendix A): C1, C2, S2, S8
Workplace Skills (See Appendix B): WP6

4. Explain methods of administration of medication to both small animals and large animals.
   a. Perform oral administration of liquid and solid medication.
   b. Identify and differentiate various syringe and needle types and sizes.
   c. Demonstrate parenteral administration of medication, which includes intravenous, intramuscular, subcutaneous, intradermal, and intraperitoneal.
   d. Demonstrate passage of a stomach tube.
   e. Demonstrate other methods of administration of medication such as topical, opthamologic, etc.

   Related Academic Topics (See Appendix A): C1, C6, M1, M7, S1, S8
   Workplace Skills (See Appendix B): WP6
5. Explain vaccines, biologicals, and animal immunity to diseases.
   a. Differentiate biologicals such as:
      (1) Vaccines
      (2) Toxoids
      (3) Antitoxins
      (4) Antiserums
      (5) Bacterins
      (6) Antigens
   b. Explain proper care and use of biologicals.
   c. Explain immunization schedules for domestic animals including dog, cat, horse, cow, and others.
   d. Explain active and passive immunity.

   Related Academic Topics (See Appendix A): C1, C2, C6, S1, S2, S3
   Workplace Skills (See Appendix B): WP3, WP6
6. Explain and demonstrate special clinical procedures and bandaging techniques.
   a. Explain and demonstrate ophthalmic procedures.
   b. Explain and demonstrate ear care.
   c. Explain and demonstrate a pedicure.
   d. Explain and demonstrate anal sac expression.
   e. Explain and demonstrate an enema.
   f. Explain and demonstrate intravenous catheters.
   g. Explain and demonstrate gastric lavage.
   h. Explain and demonstrate dental prophylaxis.
   i. Explain and demonstrate centesis.
   j. Explain and demonstrate semen collection and artificial insemination.
   k. Explain and demonstrate wound management.
   l. Explain and demonstrate bandaging and splint care.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S8
   Workplace Skills (See Appendix B): WP3, WP6

Course Name: Animal Anatomy and Physiology

Course Abbreviation: VAT 1314

Classification: Vocational-Technical Core

Description: Animal Anatomy and Physiology introduces the student to basic anatomy and physiology as related to the needs of a Veterinary Technician. Special emphasis is given to the structure of a selected cadaver location of specific structures and functions of these structures. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: None

Competencies and Suggested Objectives:

1. Explain anatomy and physiology, cell structure, and cell physiology.
   a. Define anatomy and physiology.
   b. Define the following terms: dissection, gross anatomy, and microscopy.
   c. Explain the importance of anatomy and physiology in veterinarian practice.
   d. Differentiate between the various branches of anatomy and physiology.
   e. Explain and name the different systems and major structures of the canine.
   f. Explain references concerning planes.
   g. Differentiate between the following descriptive terms:
      (1) Cranial
      (2) Caudal
      (3) Dorsal
      (4) Ventral
      (5) Medial
      (6) Lateral
      (7) Deep
      (8) Superficial
      (9) Palmar
      (10) Plantar
      (11) Prone
      (12) Supine
   h. Describe the differences between proximal and distal in relation to structures.
   i. Discuss the general plan of the body including cavities and regions.
   j. List the cavities of the body and explain the structures associated with each.
   k. List the regions of the body and explain each.
   l. Explain and list paired and unpaired structures.
   m. Differentiate between the various parts of the cell.

n. Describe the components of the cell including cell membrane, nucleus, and cytoplasm.
o. Explain the four primary types of tissue in the body.
p. Explain homeostasis of the body.

Related Academic Topics (See Appendix A): C1, C2, C4, C5, C6, M1, M4, M7, S1, S8

Workplace Skills (See Appendix B): WP3, WP6

2. Explain the components and physiology of the skeletal system and its articulation, and the muscles and their actions.
   a. Identify the bones of the canine body.
   b. Describe the composition of a long bone.
   c. Describe a Haversiann canal.
   d. Explain the relationship of:
      (1) Osteocytes
      (2) Osteoblast
      (3) Osteoclast
      (4) Periosteum
      (5) Endosteum
   e. Distinguish between the different types of fractures.
   f. Describe the healing forces of bones.
   g. List the several different functions of bone.
   h. Classify bones and give examples.
   i. Explain the following pathological conditions:
      (1) Tuberculosis
      (2) Osteomyelitis
      (3) Osteoma
      (4) Chondroma
      (5) Ricket
      (6) Osteomalacia
      (7) Achondroplasia
   j. Classify the joint as to:
      (1) Sutures
      (2) Gomphosis
      (3) Symphyses
      (4) Diarthrodial
   k. List and describe the function of the structure of the synovial joints.
   l. Describe the movements of a synovial joint.
   m. Explain the pathological disorder of joints.
   n. Describe the three types of muscles by action, placement, anatomy, and physiology.
   o. Explain muscle attachments.
   p. Distinguish between the different functional groups of muscles.
   q. Identify the major muscles of the canine, pectoral, cutaneous, abdominal, pelvic, and hind limbs.

r. Explain the actions of muscles during respiration.
s. Compare the structure of the smooth, cardiac, and skeletal muscles.
t. Define:
   (1) Motor unit
   (2) Neurotransmitters
   (3) Hypertrophy
   (4) Synaptic cleft
u. Describe a muscle contraction.
v. Describe factors that influence muscle contractions.
w. List and describe the effects of medications as related to muscles.

Related Academic Topics (See Appendix A): C1, C2, C4, C5, C6, M1, M4, M7, S1, S8

Workplace Skills (See Appendix B): WP3, WP6

3. Describe the anatomy and physiology of the specialized nervous system and its interrelationship with the entire body.
   a. Describe the basic origination of the nervous system including:
      (1) Neuron
      (2) Brain
      (3) Spinal cord
      (4) Nerves
   b. Identify the parts of the central and peripheral nervous system in a drawing and on the canine.
   c. Distinguish functional differences between the cerebellum, cerebrum, brain stem, and spinal cord.
   d. List the different meninges.
   e. Recognize the major cranial and spinal nerves.
   f. Distinguish between the sympathetic and the parasympathetic nervous system.
   g. Describe a nerve impulse.
   h. Explain a reflex.
   i. List the ways the autonomic nervous system can maintain a relatively stable internal body environment.
   j. Describe the affects of anesthetics as related to the nervous system.

Related Academic Topics (See Appendix A): C1, C2, C4, C5, C6, M1, M4, M7, S1, S8

Workplace Skills (See Appendix B): WP3, WP6

4. Explain the mechanics of the circulatory and respiratory system, the pathways of transport, and physiology.
   a. Describe the heart by its shape, size, covering, structure, and function of each chamber.
   b. Trace the blood through the vessels and in and out of the heart.

c. Compare the vessels of the circulatory system:
   (1) Arteries
   (2) Veins
   (3) Capillaries
   (4) Lymphic vessels
d. Describe the aorta and its branches.
e. Describe the different circulatory systems of the body.
f. Explain how the circulatory system, lymphatic system, and respiratory system interrelate.
g. Describe a cardiac cycle.
h. Explain where and how a pacemaker works.
i. Explain the condition of shock.
j. Trace air from the external environment to the erythrocytes.
k. Distinguish between the different lobes of the lungs.
l. Describe the actions of the alveoli.
m. List the different respiration rates of the:
   (1) Dog
   (2) Cow
   (3) Cat
   (4) Horse

Related Academic Topics (See Appendix A): C1, C2, C4, C5, C6, M1, M4, M7, S1, S5, S8

Workplace Skills (See Appendix B): WP3, WP6

5. Explain the process, function, pathway, and accessory organs of the digestive system.
   a. Describe the anatomy of the teeth.
   b. Trace food completely through the digestive system.
   c. Explain the relationship between the pharynx and mouth to larynx and esophagus during normal respiration and swallowing.
   d. Distinguish the different digestive processes in each area of the digestive tract.
   e. Explain the different enzymes that act on food.
   f. Describe how food is absorbed and used by the body.
   g. Explain the relationship between the circulatory, lymphatic, and digestive systems.
   h. List the accessory glands of the digestive system.

   Related Academic Topics (See Appendix A): C1, C2, C4, C5, C6, M1, M4, M7, S1, S5, S8

   Workplace Skills (See Appendix B): WP3, WP6
6. Describe and explain the urinary and male reproductive system.
   a. Describe the structure of the:
      (1) Kidneys
      (2) Ureters

(3) Bladder
(4) Urethra

b. Explain the process of micturition.
c. Distinguish between alkalosis and acidosis.
d. Describe testis, epididymis, scrotum, penis, and the blood supply to the male reproductive system.
e. Explain the secondary sex characteristics of the male and female.
f. Describe the accessory sex glands and their affect on the body.
g. Explain the movement of the sperm and fertilization.

Related Academic Topics (See Appendix A): C1, C2, C4, C5, C6, M1, M4, M7, S1, S5, S8
Workplace Skills (See Appendix B): WP3, WP6

7. Describe and explain the female reproductive system.
   a. Describe the female anatomy.
   b. Explain ovulation and estrous cycle.
   c. List and explain the functions of the hormones of the female reproductive system.

   Related Academic Topics (See Appendix A): C1, C2, C4, C5, C6, M1, M4, M7, S1, S5, S8
   Workplace Skills (See Appendix B): WP3, WP6
8. Describe and understand the anatomy and physiology of pregnancy, parturition, mammary glands, lactation, and the endocrine system.
   a. Explain the physiology of pregnancy and parturition in domestic animals.
   b. Describe the anatomy of the mammary gland.
   c. Explain the physiology of lactation.
   d. List and explain the hormones of the endocrine system.

   Related Academic Topics (See Appendix A): C1, C2, C4, C5, C6, M1, M4, M7, S1, S5, S8
   Workplace Skills (See Appendix B): WP3, WP6

Course Name: Surgical and Hospital Techniques I

Course Abbreviation: VAT 1414

Classification: Vocational-Technical Core

Description: Surgical and Hospital Techniques I is the study and practical application of sterile techniques, preparation of the surgical site, operating room conduct, assisting the surgeon, preanesthetics, anesthesiology, and anesthetic emergencies. (4 sch: 3 hr. lecture, 2 hr. 'ab)

Prerequisites: None

Competencies and Suggested Objectives:

1. Demonstrate surgical procedures, aseptic techniques, infectious organisms and their control, and identification and handling of surgical instruments.
   a. Discuss surgical procedures and their history.
   b. Describe the principles of asepsis including:
      (1) Microbial world
      (2) Diseases and immunity
      (3) Control of microbes
      (4) Aseptic techniques
   c. Identify common surgical instruments and their use.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S8

   Workplace Skills (See Appendix B): WP3, WP6
2. Demonstrate procedures of surgical preparation for the surgical room, equipment, patient, and personnel.
   a. Apply aseptic techniques in the following areas:
      (1) Surgical area
      (2) Surgical equipment and instruments
      (3) Patient preparation
      (4) Personnel

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S5, S8

   Workplace Skills (See Appendix B): WP3, WP6
3. Identify types of sutures and needles used in surgical procedures and the introduction into the preanesthetic period.
   a. Identify suture types (nonabsorbable vs. absorbable).
   b. Identify suture size.
   c. Identify needle types (size, shape, and use of).

d. Identify suture patterns.
e. Demonstrate and explain the use of preanesthetics.

Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M4, M7, S1, S5, S8

Workplace Skills (See Appendix B): WP3, WP6

4. Explain and demonstrate anesthesia, induction and monitoring techniques, endotracheal intubation, vital signs, and reflexes.
   a. Explain and demonstrate the classical stages of anesthesia.
   b. Explain and demonstrate induction techniques.
   c. Explain and demonstrate monitoring techniques.
   d. Explain and demonstrate endotracheal intubation.
   e. Explain and demonstrate maintenance of anesthesia.
   f. Explain and demonstrate vital signs.
   g. Explain and demonstrate reflexes.
   h. Explain and demonstrate surgical positioning.
   i. Explain and demonstrate recovery period.
   j. Explain and demonstrate aspiration emergencies.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M4, M7, S1, S5, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6
5. Explain and demonstrate the types of anesthetic drugs.
   a. Explain and demonstrate barbituates.
   b. Explain and demonstrate cycloheximines.
   c. Explain and demonstrate inhalation anesthetics such as:
      (1) Ether
      (2) Nitrous oxide
      (3) Chlorofluorocarbons
         i. halothane
         ii. isoflurane
         iii. methoxyflurane
   d. Explain and demonstrate agents used in postanesthetic period.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M3, M4, M7, S1, S5, S8

   Workplace Skills (See Appendix B): WP3, WP6
6. Explain and demonstrate types of anesthetic equipment including its care and use.
   a. Explain and demonstrate equipment needed for anesthesia.
   b. Identify and explain endotracheal tubes.
   c. Explain and demonstrate an anesthesia machine.
   d. Explain and demonstrate anesthetic breathing systems.
   e. Explain and demonstrate vaporizers.

f. Explain and demonstrate carrier gas flow rates.
g. Explain and demonstrate care of equipment.

Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M4, M7, S1, S5, S8

Workplace Skills (See Appendix B): WP3, WP5, WP6

7. Identify safety measures, anesthetic problems, emergencies, and special techniques involving anesthesia.
   a. Utilize workplace safety involving anesthetic gasses and other drugs.
   b. Identify anesthetic problems and emergencies including:
      (1) Human error
      (2) Equipment failure
      (3) Anesthetic agents
      (4) Patient variation factors
      (5) Response to anesthetic problems and emergencies
      (6) Potential problems in recovery
      (7) Technician's role during anesthetic problems and emergencies
   c. Explain and demonstrate special anesthetic techniques including:
      (1) Local analgesia
      (2) Neuromuscular blocking agents

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M7, S1, S5, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6

Course Name: Animal Parasites and Diseases

Course Abbreviation: VAT 1513

Classification: Vocational-Technical Core

Description: Animal Parasites and Diseases includes the study of etiology, symptoms, pathology, transmission, duration, prognosis, prevention, and general knowledge of common parasites and diseases of farm animals and pets. (3 sch: 3 hr. lecture)

Prerequisites: None

Competencies and Suggested Objectives:

1. Explain disease terminology, cause, spread, effects of diseases, how the body fights disease, and disease prevention.
   a. Define disease terminology.
   b. Discuss the history of disease.
   c. Describe classifications of diseases.
   d. Identify duration of diseases.
   e. Identify systems that disease affects.
   f. Discuss infectious and non-infectious causes of diseases.
   g. Identify classifications of microorganisms that cause disease conditions.
   h. Discuss transmission of diseases.
   i. Explain how diseases enter the body.
   j. Explain how the body protects itself from diseases.
   k. Discuss prevention of diseases.
   l. Discuss common disinfectants.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S7, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6
2. Explain small animal internal parasites.
   a. Identify and explain life cycle disease production, prevention, and control of the following small animal internal parasites:
      (1) Ascarids (roundworms)
      (2) Hookworms (Ancylostoma)
      (3) Whipworms (Trichoris)
      (4) Tapeworms (Dipylidium and Taenia)
      (5) Coccidia (Isospora and Taenia)
      (6) Heartworms (Dirofilaria immitis)
      (7) Giardia

(8) Esophageal worm
(9) Strongyloides

Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S7, S8

Workplace Skills (See Appendix B): WP3, WP5, WP6

3. Explain external parasites of small animals, their life cycles, diseases they may cause, and control of such parasites.
   a. Identify and explain life cycle, disease production, prevention, and control of the following small animal external parasites:
      (1) Fleas
      (2) Lice
      (3) Blowflies, screwworm flies, and flesh flies
      (4) Mites such as demodectic, otodectic, and sarcoptic mites
      (5) Ticks

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S7, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6
4. Explain external and internal parasites of the equine, bovine, porcine, and avian species.
   a. Identify and explain life cycle, disease production, prevention, and control of the following large animal external and internal parasites:
      (1) Equine internal parasites such as strongyles, ascarids, pinworms, bots, and stomach worms.
      (2) Equine external parasites such as house flies, horse flies, stable flies, lice, ticks, and mange mites.
      (3) Bovine internal parasites such as stomach worms, tapeworms, nodular worms, hookworms, lungworms, strongyloides, liver flukes, and coccidia.
      (4) Bovine external parasites such as the face fly and cattle grubs.
      (5) Porcine internal parasites such as stomach worms, ascarids, and lungworms.
      (6) Avian parasites.
   b. Describe and identify common anthelminics.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M4, M7, S1, S2, S3, S5, S7, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6
5. Explain common small animal viral, bacterial, fungal, etc. diseases.
   a. Identify and explain the etiology, method of spread, pathology, tests to aid in diagnosing, symptoms, prevention, and control of the following small animal diseases:
      (1) Canine viral diseases such as distemper, hepatitis, bronchitis, herpesvirus, rabies, and parvo.
      (2) Canine bacterial diseases such as tetanus, brucellosis, and leptospirosis.

(3) Canine mycotic diseases.
(4) Canine protozoal diseases.
(5) Canine metabolic diseases.
(6) Feline viral diseases such as distemper, rabies, rhinotracheitis, peritonitis, and leukemia.
(7) Feline bacterial diseases.
(8) Feline mycotic diseases.
(9) Feline protozoal diseases.

Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S7, S8

Workplace Skills (See Appendix B): WP3, WP5, WP6

6. Explain common viral, bacterial, mycotic, and lameness diseases of the equine species.
   a. Identify and explain the etiology, method of spread, pathology, tests to aid in diagnosing, symptoms, prevention, and control of the following common equine diseases:
      (1) Viral diseases such as encephalomyelitis, equine infectious anemia (EIA), influenza, and viral rhinopneumonitis.
      (2) Bacterial diseases such as anthrax, glanders, strangles, leptospirosis, tetanus, and navel ill.
      (3) Fungal infections.
      (4) Lameness.
      (5) Colic.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S7, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6

7. Explain common viral, bacterial, protozoal, and metabolic diseases of cattle and swine.
   a. Identify and explain the etiology, method of spread, pathology, tests to aid in diagnosing, symptoms, prevention, and control of the following cattle and swine diseases:
      (1) Viral diseases such as foot and mouth diseases, vesicular stomatitis, Infectious bovine rhinotracheitis (IBR), bovine viral diarrhea (BVD), bluetongue, pinkeye, and shipping fever.
      (2) Bacterial diseases such as anthrax, clostridial diseases, brucellosis, lepto, tuberculosis, and mastitis.
      (3) Protozoal diseases such as anaplasmosis.
      (4) Metabolic diseases such as milk fever, grass tetany, bloat, and acetonemia.
      (5) Common viral swine diseases such as hog cholera, transmissible gastroenteritis (TGE), pseudorabies, swine influenza, and viral pig pneumonia (VPP).

(6) Common bacterial swine diseases such as erysipelas, leptospirosis, and pneumonia.

(7) Protozoal disease such as eperythrozoonosis.

Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S7, S8

Workplace Skills (See Appendix B): WP3, WP5, WP6

8. Explain the source, symptoms, prevention and control of common poisons that affect farm animals.

a. Identify and explain the source of, pathology symptoms, prevention, and control of the most common poisons of farm animals and pets to include:

(1) Arsenic
(2) Lead
(3) Strychnine
(4) Cyanide
(5) Salt
(6) Nitrate
(7) Organophosphorus
(8) Chlorinated hydrocarbons
(9) Warfarin
(10) Common poisonous plants

Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S7, S8

Workplace Skills (See Appendix B): WP3, WP5, WP6

Course Name: Clinical Pathology

Course Abbreviation: VAT 1613

Classification: Vocational-Technical Core

Description: Clinical Pathology is the study and practical application of veterinary diagnostic aids. The course includes hematology, blood chemistries, serology, urinalysis, fecal analysis, and organ function test. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None

Competencies and Suggested Objectives:

1. Explain basic microscopy.
   a. Identify the types of microscopes.
   b. Discuss the function of microscopes.
   c. Identify the parts of a microscope.
   d. Discuss how to use a microscope.
   e. Discuss how to care for and maintain a microscope.
   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M7, S6, S8
   Workplace Skills (See Appendix B): WP3, WP5, WP6
2. Demonstrate how to perform a fecal analysis, identify common parasite ova, identify common external parasites, and perform skin tests.
   a. Perform a fecal analysis.
   b. Identify common parasite ova.
   c. Identify common external parasites.
   d. Discuss the diagnostic aids to help identify common external parasites.
   e. Perform a skin scraping.
   f. Discuss other skin diagnostic tests.
   Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S6, S8
   Workplace Skills (See Appendix B): WP3, WP5, WP6
3. Perform a complete urinalysis.
   a. Take a correct history regarding urinary problems in animals.
   b. Discuss the normal function of the urinary system.
   c. Perform a physical exam of urine.
   d. Perform a chemical exam of urine.
   e. Perform a microscopic exam of urine.
   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M7, S1, S2, S5, S6, S8
   Workplace Skills (See Appendix B): WP3, WP5, WP6

4. Perform blood chemistry exams to evaluate the function of the liver, kidney, pancreatic function, thyroid function, and other body organs, and serology tests.
   a. Collect blood samples for specific tests.
   b. Perform blood or body fluid chemistry tests to evaluate the following:
      (1) Kidney function
      (2) Liver function
      (3) Pancreatic function
      (4) Thyroid function
      (5) Cardiovascular function
      (6) Cerebrospinal fluid exam
      (7) Serology
         i. Occult heart test
         ii. Feline leukemia test
         iii. Parvo test
         iv. Others
      (8) Exudate vs. transudate

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M7, S1, S2, S5, S6, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6
5. Explain blood formation, blood composition, and the physiology of blood.
   a. Explain the formation of blood, blood composition, and blood physiology which includes:
      (1) Body tissues that produce blood.
      (2) How blood is produced.
      (3) What blood is composed of.
      (4) Function of blood.
      (5) Normal destruction of blood.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M7, S1, S5, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6
6. Explain the clotting process of blood and tests to evaluate blood clotting in animals.
   a. Explain how blood clots and diagnostic tests are used to evaluate the blood clotting procedure:
      (1) Factors required for blood clotting.
      (2) Blood cells required for blood clotting.
      (3) The physiology of blood clotting.
      (4) The common causes of blood not clotting.
      (5) Bleeding time test.
      (6) Coagulation time test.
      (7) Platelet count.

(8) Anticoagulants for specimen collection:
i. EDTA
ii. Oxalates
iii. Heparin
iv. Others

Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M7, S1, S5, S6, S8

Workplace Skills (See Appendix B): WP3, WP5, WP6

7. Explain a CBC (complete blood count) and how to perform each test.
   a. Explain a CBC, the normal CBC values for common domestic animals, and how to perform each test including:
      (1) Hemoglobin concentration
      (2) Pack Cell Volume (hematocrit)
      (3) Red Blood Cell count
      (4) White Blood Cell count
      (5) Red Blood Cell indices
      (6) Differential blood count

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M3, M4, M7, S1, S5, S6, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6

8. Discuss pathological or abnormal blood conditions.
   a. Recognize pathological blood conditions including:
      (1) Red blood cell abnormalities
      (2) White blood cell abnormalities
      (3) Blood parasites such as heartworms, haemobartonella, anaplasmosis, etc.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6

Course Name: Surgical and Hospital Techniques II

Course Abbreviation: VAT 1424

Classification: Vocational-Technical Core

Description: Surgical and Hospital Techniques II is the study and practical application of basic clinical and hospital techniques required of the veterinary technician. Subjects include pharmacology, animal nutrition, radiology, patient management and client instructions, and office procedures. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: None

Competencies and Suggested Objectives:

1. Recognize drug classifications, use, action, dosage calculation, drug laws, ordering drugs, and maintaining a drug inventory.
   a. Identify drug classifications.
   b. Discuss the use of drugs in the care of animals.
   c. Discuss the action of drugs.
   d. Describe drug laws.
   e. Demonstrate proper care of drugs.
   f. Identify drug companies and distributors.
   g. Demonstrate drug ordering and inventory.
   h. Perform dosage calculations.
   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M3, M4, M7, S1, S5, S8
   Workplace Skills (See Appendix B): WP3, WP5, WP6
2. Describe basic nutrition, feeding and care of the healthy and diseased animals, and knowledge of special diets for animal consumption.
   a. Discuss basic nutrition for animals.
   b. Discuss pet foods.
   c. Demonstrate routine feeding and care of animals.
   d. Discuss special diets.
   e. Explain feeding and care of the diseased patient and special disorders.
   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M4, M7, S1, S5, S8
   Workplace Skills (See Appendix B): WP3, WP5, WP6
3. Explain basic knowledge of the characteristics of radiation, the production of x-rays, and the formation of a radiograph.
   a. Describe radiation formation.
   b. Discuss characteristics of radiation.
   c. Discuss an x-ray tube.

d. Discuss and demonstrate exposure factors.
e. Identify radiographic quality.
f. Perform film processing.
g. Perform technique chart.
h. Discuss and demonstrate patient positioning.
i. Perform radiation safety measures.

Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M3, M4, M7, S1, S5, S6, S8

Workplace Skills (See Appendix B): WP3, WP5, WP6

4. Examine known causes and predisposing factors of the most common disorders seen in small animals, and explain the technician's role in each disorder.
   a. Explain the role of the technician and provide basic knowledge of the following common disorders:
      (1) Skin
      (2) Alimentary tract
      (3) Cardiovascular
      (4) Surgery and eye
      (5) Infectious diseases
      (6) Neoplastic diseases
      (7) Musculoskeletal
      (8) Endocrine
      (9) Nervous system
      (10) Respiratory
      (11) Parasites
      (12) Physical and chemical
      (13) Reproductive system
      (14) Urologic
      (15) Ear

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, S1, S2, S3, S5, S7, S8

   Workplace Skills (See Appendix B): WP3, WP5, WP6

5. Explain hospital procedures, clinical business transactions, and client relationships.
   a. Complete hospital and business records properly.
   b. Communicate properly to clients on the telephone.
   c. Collect payment.
   d. Quote fees.
   e. Maintain proper client relationships.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, M7

   Workplace Skills (See Appendix B): WP3, WP5, WP6

Course Name: Preceptorship

Course Abbreviation: VAT 2414

Classification: Vocational-Technical Core

Description: The Animal Health Technician student is required to complete a four week preceptorship with an approved Mississippi veterinarian practice or laboratory animal facility. This internship provides hands-on experience in a small animal, mixed animal, large animal, or laboratory animal facility. (4 sch: 12 hr. clinical)

Prerequisites: Successful completion of two years of course work.

Competencies and Suggested Objectives:

1. Apply practical skills and technical information while in a supervised professional work setting.
   a. Apply the scholastic knowledge acquired to practical applications in a veterinary practice.
   b. Perform duties as assigned by the veterinarian.
   c. Cooperate with the supervising veterinarian.
   d. Arrive at work on time and willingly work the assigned days and hours.
   e. Appear for work appropriately dressed.
   f. Be enthusiastic about duties to be performed.
   g. Present a pleasing personality and cooperate with other employees.
   h. Accept new duties and new techniques as they arise.
   i. Recognize work to be done and do it.
   j. Notify the veterinarian of unexpected absences or tardiness as soon as possible.
   k. Use judgment and imagination to the best of his/her ability when required to do so.
   l. Treat all clients in a courteous manner.
   m. Ask for assistance and guidance if unsure about duties, laboratory tests, etc.
   n. Treat the veterinarian with respect at all times.
   o. Keep all client information confidential.
   p. Give the veterinarian honest accurate information at all times.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M1, M7, S3, S5, S8

   Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6

COLLEGE OF VETERINARY MEDICINE (CVM) COURSES

July 30, 1996

Course Name: Small Animal Health Techniques

Course Abbreviation: CVM 2104

Classification: CVM Course

Description: This rotation is designed to simulate the role of the technician in a private practice and is supervised through the Health Assessment Service of the Small Animal Clinic. The students will participate in all aspects of patient evaluation and care under the supervision and guidance of the teaching team. Duties will include patient admission, diagnostic and therapeutic procedures, daily case care, patient discharge, client communications, emergency coverage, maintenance of a Problem Oriented Medical Record on each patient, and participation in daily case discussions and rounds. (4 sch: 4 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Small Animal Medical Techniques

Course Abbreviation: CVM 2114

Classification: CVM Course

Description: Supervised rotation through the Medical Service of the Small Animal Clinic. Students participate in all technical aspects of patient diagnosis and care. (4 sch: 4 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Equine Medical Techniques

Course Abbreviation: CVM 2124

Classification: CVM Course

Description: Supervised rotation through the Equine section of the Large Animal Clinic. Students participate in all technical aspects of patient diagnosis and care. (4 sch: 4 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Food Animal Medical Techniques

Course Abbreviation: CVM 2134

Classification: CVM Course

Description: Supervised rotation through the Food Animal Unit of the Large Animal Clinic. Students participate in all technical aspects of food animal diagnosis, herd health assessment, and management. (4 sch: 4 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Surgical Techniques

Course Abbreviation: CVM 2144

Classification: CVM Course

Description: Supervised rotation through the Surgical Service of the Animal Health Center. Students participate in all technical aspects of surgery setup, patient care, and surgical preparation. (4 sch: 4 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

July 30, 1996

Course Name: Anesthetic Techniques

Course Abbreviation: CVM 2154

Classification: CVM Course

Description: Supervised rotation through the Anesthesia Service of the Animal Health Center. Students participate in all technical aspects of preanesthetic evaluation, anesthetic maintenance and recovery. (4 sch: 4 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Radiologic and Imaging Techniques

Course Abbreviation: CVM 2164

Classification: CVM Course

Description: Supervised rotation through the Radiology Service of the Animal Health Center. The principles of radiography, ultrasound, radiotherapy, and nuclear medicine will be covered, as well as production of radiographic and ultrasonic images in the normal and abnormal patient. Diagnostic radiography and ultrasound will be emphasized. (4 sch: 4 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Technical Laboratory Services

Course Abbreviation: CVM 2172

Classification: CVM Course

Description: Supervised rotation through the Laboratory Service of the College of Veterinary Medicine. Students participate in all technical aspects of basic routine clinical pathology and microbiology laboratory procedures, including preparation, preservation, and packaging of laboratory samples for shipping. Basic laboratory safety, quality control, and record management will also be taught. (2 sch: 2 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Laboratory Animal Techniques

Course Abbreviation: CVM 2184

Classification: CVM Course

Description: Supervised rotation through the Laboratory Animal Health Unit of the College of Veterinary Medicine. This rotation prepares the animal health technician student for employment in a laboratory animal facility. Students participate in all technical aspects of laboratory animal care and management. (4 sch: 4 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

July 30, 1996

Course Name: Pharmacy Techniques

Course Abbreviation: CVM 2204

Classification: CVM Course

Description: Supervised rotation through the Pharmacy of the College of Veterinary Medicine. Students participate in all technical aspects of pharmaceutical preparation, dispensing, inventory, and management related to the veterinary technician and the veterinary practice. (4 sch: 4 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Necropsy Techniques

Course Abbreviation: CVM 2212

Classification: CVM Course

Description: Supervised rotation through the Necropsy Section of the Diagnostic Laboratory. Students participate in all aspects of necropsy preparation, performance, record keeping, sample collection, and cleanup. (2 sch: 2 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Animal Health Technical Procedures

Course Abbreviation: CVM 2302

Classification: CVM Course

Description: Orientation to basic animal health technical procedures including patient records, diagnostic, therapeutic, and animal nursing procedures. (2 sch: 1 hr. lecture, 1 hr. lab)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Laboratory Animal Care

Course Abbreviation: CVM 2314

Classification: CVM Course

Description: Orientation to basic principles of laboratory animal care. An introduction to the scientific basis of laboratory animal use. Includes an overview of animal welfare regulations. (4 sch: 3 hr. lecture, 1 hr. lab)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

Course Name: Veterinary Business Procedures

Course Abbreviation: CVM 2322

Classification: CVM Course

Description: Supervised clinical rotation involving the business procedures in a veterinary practice. The student participates as a working team member at the reception desk and the discharge desk. Work in Medical Records, Client Accounts, and Clinical Receiving will also be covered. (2 sch: 2 hr. practicum)

Prerequisites: Successful completion of all first year courses.

Competencies and Suggested Objectives:

See Course Syllabi for Veterinary Technology from the College of Veterinary Medicine at Mississippi State University.

SECTION II:

RECOMMENDED TOOLS AND EQUIPMENT

RECOMMENDED TOOLS AND EQUIPMENT FOR VETERINARY TECHNOLOGY PROGRAMS

CAPITAL EQUIPMENT

1. X-ray machine (animal), with attachments (1 per program)
2. Dental unit with accessories (1 per program)
3. Anesthesia machine, Drager (1 per program)
4. Anesthesia machine, Scavinger (1 per program)
4. Operating Table, V-Top (1 per program)
5. Autoclave, Large (1 per program)
6. Microscope with dual head (1 per program)
7. Microscope, binocular (1 per 2 students)
8. Cage Unit S/S assembly 8' (1 per program)
9. Electrosurgical Unit (1 per program)
10. Dental Scaler (1 per program)
11. Cardiac Respiratory Monitor (1 per program)
12. Chemistry Analyzer (1 per program)
13. Hemotology (CBC) Analyzer (1 per program)

NON-CAPITAL EQUIPMENT

1. Sink, stainless steel (minimum 1 per program)
2. Sterilizer, autoclave (1 per program)
3. Centrifuge, table-top (1 per program)
4. Exam and Weigh Table (1 per program)
5. Mobile cages with feed pans (2 per program)
6. Ophthalmo/otoscope (1 per program)
7. Skeleton, horse fore limb (1 per program)
8. Skeleton, horse hind limb (1 per program)
9. Skeleton, dog (5 per program)
10. Scales, baby (1 per program)
11. Scales, table (1 per program)
12. Differential counters (5 per program)
13. Hemacytometer (1 per student)
14. Oxygen (2 tanks per program)
15. X-ray processing equipment (1 per program)
16. X-ray cassette container (6 per program)
17. X-ray film viewer (2 per program)
18. Surgical instruments, assorted set (1 set per operating room)
19. Surgical lights (1 per program)
20. Mayo stand (1 per program)
21. Operating table (1per program)
22. Tub table/scrub table (1per program)

INSTRUCTIONAL AIDS

1. Instructor desk (1 per program)
2. Instructor chair (1 per program)
3. TV monitor, color, 27" or larger (1 per program)
4. 35mm Projector (1 per program)
5. AV screen (1 per program)
6. VCR (1 per program)

Suggested References (1 of each per program):

Benjamin, M. *Outline of Veterinary Clinical Pathology*.
Bill. *Pharmacology for Veterinary Technicians*.
Chiasson. *Laboratory Anatomy of the Cat* (8th ed.).
Crow-Walshaw. *Manual of Clinical Procedures in the Dog and Cat*.
Frandson. *Anatomy and Physiology of Farm Animals* (3rd ed.).
Lavin. *Radiography in Veterinary Technology*.
McCurnin. *Clinical Textbook for Veterinary Technicians* (3rd ed.).
McKelvey-Hollingshead. *Small Animal Anesthesia*. Mosby.
Merck Veterinary Manual (6th ed. or newer).
Pratt. *Laboratory Procedures for Animal Health Technicians*.
Richardson & Richardson, Jr. *Drugs and Solutions* (5th ed.). Mosby.
Warren, R.G. *Small Animal Surgical Nursing* (2nd ed.).

Secondary References (1 of each per program):

AALAS Training Manual Series. Vol. 1: *Assistant Laboratory Animal Technician*.
Pratt. *Medical, Surgical, and Anesthetic Nursing for Veterinary Technicians*.
Practical Guide to Diagnostic Imaging.

Videotapes (1 of each per program):

Stallion Management (1984)
Foaling (1984)
Passage of the Stomach Tube (1976)
Equine Castration (1977)
Dental Techniques in the Horse (1984)

APPENDIX A:

RELATED ACADEMIC TOPICS

APPENDIX A

RELATED ACADEMIC TOPICS FOR COMMUNICATIONS

C1 Interpret written material.
C2 Interpret visual materials (maps, charts, graphs, tables, etc.).
C3 Listen, comprehend, and take appropriate actions.
C4 Access, organize, and evaluate information.
C5 Use written and/or oral language skills to work cooperatively to solve problems, make decisions, take actions, and reach agreement.
C6 Communicate ideas and information effectively using various oral and written forms for a variety of audiences and purposes.

EXPANDED TOPICS FOR COMMUNICATIONS

TOPIC C1: Interpret written material.

C1.01 Read and follow complex written directions.
C1.02 Recognize common words and meanings associated with a variety of occupations.
C1.03 Adjust reading strategy to purpose and type of reading.
C1.04 Use sections of books and reference sources to obtain information.
C1.05 Compare information from multiple sources and check validity.
C1.06 Interpret items and abbreviations used in multiple forms.
C1.07 Interpret short notes, memos, and letters.
C1.08 Comprehend technical words and concepts.
C1.09 Use various reading techniques depending on purpose for reading.
C1.10 Find, read, understand, and use information from printed matter or electronic sources.

TOPIC C2: Interpret visual materials (maps, charts, graphs, tables, etc.).

C2.01 Use visuals in written and in oral presentations.
C2.02 Recognize visual cues to meaning (layout, typography, etc.).
C2.03 Interpret and apply information using visual materials.

TOPIC C3: Listen, comprehend, and take appropriate action.

C3.01 Identify and evaluate orally-presented messages according to purpose.
C3.02 Recognize barriers to effective listening.
C3.03 Recognize how voice inflection changes meaning.
C3.04 Identify speaker signals requiring a response and respond accordingly.
C3.05 Listen attentively and take accurate notes.
C3.06 Use telephone to receive information.

C3.07 Analyze and distinguish information from formal and informal oral presentations.

TOPIC C4: Access, organize, and evaluate information.

C4.01 Distinguish fact from opinion.
C4.02 Use various print and non-print sources for specialized information.
C4.03 Interpret and distinguish between literal and figurative meaning.
C4.04 Interpret written or oral communication in relation to context and writer's point of view.
C4.05 Use relevant sources to gather information for written or oral communication.

TOPIC C5: Use written and/or oral language skills to work cooperatively to solve problems, make decisions, take actions, and reach agreement.

C5.01 Select appropriate words for communication needs.
C5.02 Use reading, writing, listening, and speaking skills to solve problems.
C5.03 Compose inquiries and requests.
C5.04 Write persuasive letters and memos.
C5.05 Edit written reports, letters, memos, and short notes for clarity, correct grammar, and effective sentences.
C5.06 Write logical and understandable statements, phrases, or sentences for filling out forms, for correspondence or reports.
C5.07 Write directions or summaries of processes, mechanisms, events, or concepts.
C5.08 Select and use appropriate formats for presenting reports.
C5.09 Convey information to audiences in writing.
C5.10 Compose technical reports and correspondence that meet accepted standards for written communications.

TOPIC C6: Communicate ideas and information using oral and written forms for a variety of audiences and purposes.

C6.01 Give complex oral instructions.
C6.02 Describe a business or industrial process/mechanism.
C6.03 Participate effectively in group discussions and decision making.
C6.04 Produce effective oral messages utilizing different media.
C6.05 Explore ideas orally with partners.
C6.06 Participate in conversations by volunteering information when appropriate and asking relevant questions when appropriate.
C6.07 Restate or paraphrase a conversation to confirm one's own understanding.
C6.08 Gather and provide information utilizing different media.

C6.09 Prepare and deliver persuasive, descriptive, and demonstrative oral presentations.

RELATED ACADEMIC TOPICS FOR MATHEMATICS

M1 Relate number relationships, number systems, and number theory.
M2 Explore patterns and functions.
M3 Explore algebraic concepts and processes.
M4 Explore the concepts of measurement.
M5 Explore the geometry of one-, two-, and three-dimensions.
M6 Explore concepts of statistics and probability in real world situations.
M7 Apply mathematical methods, concepts, and properties to solve a variety of real-world problems.

EXPANDED TOPICS FOR MATHEMATICS

TOPIC M1: Relate number relationships, number systems, and number theory.

M1.01 Understand, represent, and use numbers in a variety of equivalent forms (integer, fraction, decimal, percent, exponential, and scientific notation) in real world and mathematical problem situations.
M1.02 Develop number sense for whole numbers, fractions, decimals, integers, and rational numbers.
M1.03 Understand and apply ratios, proportions, and percents in a wide variety of situations.
M1.04 Investigate relationships among fractions, decimals, and percents.
M1.05 Compute with whole numbers, fractions, decimals, integers, and rational numbers.
M1.06 Develop, analyze, and explain procedures for computation and techniques for estimations.
M1.07 Select and use an appropriate method for computing from among mental arithmetic, paper-and-pencil, calculator, and computer methods.
M1.08 Use computation, estimation, and proportions to solve problems.
M1.09 Use estimation to check the reasonableness of results.

TOPIC M2: Explore patterns and functions.

M2.01 Describe, extend, analyze, and create a wide variety of patterns.
M2.02 Describe and represent relationships with tables, graphs, and rules.
M2.03 Analyze functional relationships to explain how a change in one quantity results in a change in another.
M2.04 Use patterns and functions to represent and solve problems.
M2.05 Explore problems and describe results using graphical, numerical, physical, algebraic, and verbal mathematical models or representations.

M2.06 Use a mathematical idea to further their understanding of other mathematical ideas.
M2.07 Apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as art, music, and business.

TOPIC M3: Explore algebraic concepts and processes.

M3.01 Represent situations and explore the interrelationships of number patterns with tables, graphs, verbal rules, and equations.
M3.02 Analyze tables and graphs to identify properties and relationships and to interpret expressions and equations.
M3.03 Apply algebraic methods to solve a variety of real world and mathematical problems.

TOPIC M4: Explore the concepts of measurement.

M4.01 Estimate, make, and use measurements to describe and compare phenomena.
M4.02 Select appropriate units and tools to measure to the degree of accuracy required in a particular situation.
M4.03 Extend understanding of the concepts of perimeter, area, volume, angle measure, capacity, and weight and mass.
M4.04 Understand and apply reasoning processes, with special attention to spatial reasoning and reasoning with proportions and graphs.

TOPIC M5: Explore the geometry of one-, two-, and three-dimensions.

M5.01 Identify, describe, compare, and classify geometric figures.
M5.02 Visualize and represent geometric figures with special attention to developing spatial sense.
M5.03 Explore transformations of geometric figures.
M5.04 Understand and apply geometric properties and relationships.
M5.05 Classify figures in terms of congruence and similarity and apply these relationships.

TOPIC M6: Explore the concepts of statistics and probability in real world situations.

M6.01 Systematically collect, organize, and describe data.
M6.02 Construct, read, and interpret tables, charts, and graphs.
M6.03 Develop an appreciation for statistical methods as powerful means for decision making.
M6.04 Make predictions that are based on exponential or theoretical probabilities.

M6.05 Develop an appreciation for the pervasive use of probability in the real world.

TOPIC M7: Apply mathematical methods, concepts, and properties to solve a variety of real-world problems.

M7.01 Use computers and/or calculators to process information for all mathematical situations.
M7.02 Use problem-solving approaches to investigate and understand mathematical content.
M7.03 Formulate problems from situations within and outside mathematics.
M7.04 Generalize solutions and strategies to new problem situations.

RELATED ACADEMIC TOPICS FOR SCIENCE

S1 Explain the Anatomy and Physiology of the human body.
S2 Apply the basic biological principles of Plants, Viruses and Monerans, Algae, Protista, and Fungi.
S3 Relate the nine major phyla of the kingdom animalia according to morphology, anatomy, and physiology.
S4 Explore the chemical and physical properties of the earth to include Geology, Meteorology, Oceanography, and the Hydrologic Cycle.
S5 Investigate the properties and reactions of matter to include symbols, formulas and nomenclature, chemical equations, gas laws, chemical bonding, acid-base reactions, equilibrium, oxidation-reduction, nuclear chemistry, and organic chemistry.
S6 Explore the principles and theories related to motion, mechanics, electricity, magnetism, light energy, thermal energy, wave energy, and nuclear physics.
S7 Explore the principles of genetic and molecular Biology to include the relationship between traits and patterns of inheritance, population genetics, the structure and function of DNA, and current applications of DNA technology.
S8 Apply concepts related to the scientific process and method to include safety procedures for classroom and laboratory; use and care of scientific equipment; interrelationships between science, technology and society; and effective communication of scientific results in oral, written, and graphic form.

EXPANDED TOPICS FOR SCIENCE

TOPIC S1: Explain the Anatomy and Physiology of the human body.

S1.01 Recognize common terminology and meanings.
S1.02 Explore the relationship of the cell to more complex systems within the body.

S1.03 Summarize the functional anatomy of all the major body systems.
S1.04 Relate the physiology of the major body systems to its corresponding anatomy.
S1.05 Compare and contrast disease transmission and treatment within each organ system.
S1.06 Explore the usage of medical technology as related to human organs and organ systems.
S1.07 Explain the chemical composition of body tissue.

TOPIC S2: Apply the basic biological principles of Plants, Viruses and Monerans, Algae, Protista, and Fungi.

S2.01 Identify the major types and structures of plants, viruses, monera, algae protista, and fungi.
S2.02 Explain sexual and asexual reproduction.
S2.03 Describe the ecological importance of plants as related to the environment.
S2.04 Analyze the physical chemical and behavioral process of a plant.

TOPIC S3: Relate the nine major phyla of the kingdom animalia according to morphology, anatomy, and physiology.

S3.01 Explain the morphology, anatomy, and physiology of animals.
S3.02 Describe the characteristics, behaviors, and habitats of selected animals.

TOPIC S4: Explore the chemical and physical properties of the earth to include Geology, Meteorology, Oceanography, and the Hydrologic Cycle.

S4.01 Examine minerals and their identification, products of the rock cycle, byproducts of weathering, and the effects of erosion.
S4.02 Relate the Hydrologic Cycle to include groundwater its zones, movement, and composition; surface water systems, deposits, and runoff.
S4.03 Consider the effects of weather and climate on the environment.
S4.04 Examine the composition of seawater; wave, tides, and currents; organisms, environment, and production of food; energy, food and mineral resources of the oceans.

TOPIC S5: Investigate the properties and reactions of matter to include symbols, formulas and nomenclature, chemical equations, gas laws, chemical bonding, acid-base reactions, equilibrium, oxidation-reduction, nuclear chemistry, and organic chemistry.

S5.01 Examine the science of chemistry to include the nature of matter, symbols, formulas and nomenclature, and chemical equations.

S5.02 Identify chemical reactions including precipitation, acids-bases, and reduction-oxidation.
S5.03 Explore the fundamentals of chemical bonding and principles of equilibrium.
S5.04 Relate the behavior of gases.
S5.05 Investigate the structure, reactions, and uses of organic compounds; and investigate nuclear chemistry and radiochemistry.

TOPIC S6: Explore the principles and theories related to motion, mechanics, electricity, magnetism, light energy, thermal energy, wave energy, and nuclear physics.

S6.01 Examine fundamentals of motion of physical bodies and physical dynamics.
S6.02 Explore the concepts and relationships among work, power, and energy.
S6.03 Explore principles, characteristics, and properties of electricity, magnetism, light energy, thermal energy, and wave energy.
S6.04 Identify principles of modern physics related to nuclear physics.

TOPIC S7: Explore the principles of genetic and molecular Biology to include the relationship between traits and patterns of inheritance; population genetics, the structure and function of DNA, and current applications of DNA technology.

S7.01 Examine principles, techniques, and patterns of traits and inheritance in organisms.
S7.02 Apply the concept of population genetics to both microbial and multicellular organism.
S7.03 Identify the structure and function of DNA and the uses of DNA technology in science, industry, and society.

TOPIC S8: Apply concepts related to the scientific process and method to include safety procedures for classroom and laboratory; use and care of scientific equipment; interrelationships between science, technology and society; and effective communication of scientific results in oral, written, and graphic form.

S8.01 Apply the components of scientific processes and methods in classroom and laboratory investigations.
S8.02 Observe and practice safe procedures in the classroom and laboratory.
S8.03 Demonstrate proper use and care for scientific equipment.
S8.04 Investigate science careers, and advances in technology.
S8.05 Communicate results of scientific investigations in oral, written, and graphic form.

APPENDIX B:

WORKPLACE SKILLS

APPENDIX B
WORKPLACE SKILLS FOR THE 21ST CENTURY

WP1 Allocates resources (time, money, materials and facilities, and human resources).

WP2 Acquires, evaluates, organizes and maintains, and interprets/communicates information, including the use of computers.

WP3 Practices interpersonal skills related to careers including team member participation, teaching other people, serving clients/customers, exercising leadership, negotiation, and working with culturally diverse.

WP4 Applies systems concept including basic understanding, monitoring and correction system performance, and designing and improving systems.

WP5 Selects, applies, and maintains/troubleshoots technology.

WP6 Employs thinking skills including creative thinking, decision making, problem solving, reasoning, and knowing how to learn.

APPENDIX C:

STUDENT COMPETENCY PROFILE

STUDENT COMPETENCY PROFILE

Student: _____

This record is intended to serve as a method of noting student achievement of the competencies in each course. It can be duplicated for each student and serve as a cumulative record of competencies achieved in the program.

In the blank before each competency, place the date on which the student mastered the competency.

Veterinary Math Calculations (VAT 1111)

_____ 1. Demonstrate the numeration systems, fractions, decimals, percentages, and ratio-proportion problems.
_____ 2. Differentiate the metric system and units of measures in the metric, apothecaries, and household systems.
_____ 3. Calculate oral and parenteral dosages.
_____ 4. Calculate intravenous solution rates and the preparation of solutions.

Animal Restraint and Medication (VAT 1213)

_____ 1. Explain the proper techniques in restraining domestic animals.
_____ 2. Demonstrate techniques of collecting medical history data, the performance of a physical examination, and completing a medical record.
_____ 3. Use a microscope to perform a fecal examination, and identify common parasite ova.
_____ 4. Explain methods of administration of medication to both small animals and large animals.
_____ 5. Explain vaccines, biologicals, and animal immunity to diseases.
_____ 6. Explain and demonstrate special clinical procedures and bandaging techniques.

Animal Anatomy and Physiology (VAT 1314)

_____ 1. Explain anatomy and physiology, cell structure, and cell physiology.
_____ 2. Explain the components and physiology of the skeletal system and its articulation, and the muscles and their actions.
_____ 3. Describe the anatomy and physiology of the specialized nervous system and its interrelationship with the entire body.
_____ 4. Explain the mechanics of the circulatory and respiratory system, the pathways of transport, and physiology.

_____ 5. Explain the process, function, pathway, and accessory organs of the digestive system.
_____ 6. Describe and explain the urinary and male reproductive system.
_____ 7. Describe and explain the female reproductive system.
_____ 8. Describe and understand the anatomy and physiology of pregnancy, parturition, mammary glands, lactation, and the endocrine system.

Surgical and Hospital Techniques I (VAT 1414)

_____ 1. Demonstrate surgical procedures, aseptic techniques, infectious organisms and their control, and identification and handling of surgical instruments.
_____ 2. Demonstrate procedures of surgical preparation for the surgical room, equipment, patient, and personnel.
_____ 3. Identify types of sutures and needles used in surgical procedures and the introduction into the preanesthetic period.
_____ 4. Explain and demonstrate anesthesia, induction and monitoring techniques, endotracheal intubation, vital signs, and reflexes.
_____ 5. Explain and demonstrate the types of anesthetic drugs.
_____ 6. Explain and demonstrate types of anesthetic equipment including its care and use.
_____ 7. Identify safety measures, anesthetic problems, emergencies, and special techniques involving anesthesia.

Animal Parasites and Diseases (VAT 1513)

_____ 1. Explain disease terminology, cause, spread, effects of diseases, how the body fights disease, and disease prevention.
_____ 2. Explain small animal internal parasites.
_____ 3. Explain external parasites of small animals, their life cycles, diseases they may cause, and control of such parasites.
_____ 4. Explain external and internal parasites of the equine, bovine, porcine, and avian species.
_____ 5. Explain common small animal viral, bacterial, fungal, etc. diseases.
_____ 6. Explain common viral, bacterial, mycotic, and lameness diseases of the equine species.
_____ 7. Explain common viral, bacterial, protozoal, and metabolic diseases of cattle and swine.
_____ 8. Explain the source, symptoms, prevention and control of common poisons that affect farm animals.

Clinical Pathology (VAT 1613)

_____ 1. Explain basic microscopy.
_____ 2. Demonstrate how to perform a fecal analysis, identify common parasite ova, identify common external parasites, and perform skin tests.
_____ 3. Perform a complete urinalysis.
_____ 4. Perform blood chemistry exams to evaluate the function of the liver, kidney, pancreatic function, thyroid function, and other body organs, and serology tests.
_____ 5. Explain blood formation, blood composition, and the physiology of blood.
_____ 6. Explain the clotting process of blood and tests to evaluate blood clotting in animals.
_____ 7. Explain a CBC (complete blood count) and how to perform each test.
_____ 8. Discuss pathological or abnormal blood conditions.

Surgical and Hospital Techniques II (VAT 1424)

_____ 1. Recognize drug classifications, use, action, dosage calculation, drug laws, ordering drugs, and maintaining a drug inventory.
_____ 2. Describe basic nutrition, feeding and care of the healthy and diseased animals, and knowledge of special diets for animal consumption.
_____ 3. Explain basic knowledge of the characteristics of radiation, the production of x-rays, and the formation of a radiograph.
_____ 4. Examine known causes and predisposing factors of the most common disorders seen in small animals, and explain the technician's role in each disorder.
_____ 5. Explain hospital procedures, clinical business transactions, and client relationships.

Preceptorship (VAT 2414)

_____ 1. Apply practical skills and technical information while in a supervised professional work setting.